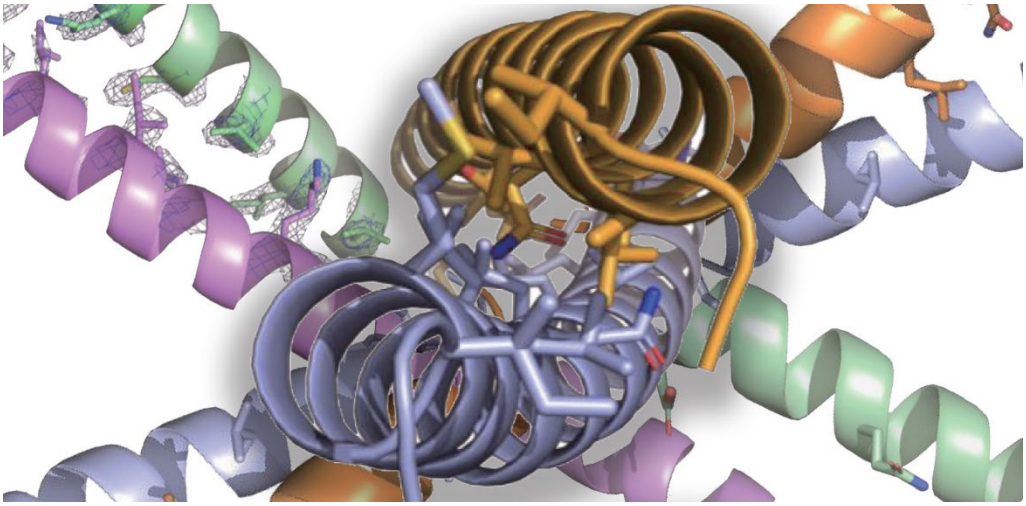

iSLB

SOCIETY FOR LEUKOCYTE BIOLOGY

Spring 2022

Vol 1

OFFICIAL NEWSLETTER OF THE SOCIETY FOR LEUKOCYTE BIOLOGY

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# From the President

As we move into the 3rd year of the pandemic, we are hopeful that the combination of vaccination and time will finally allow a transition back to "normal" life. But how has "normal" changed as the result of the last few years? Only time will tell. But I am certain that the coming year promises exciting science, unexpected discoveries, and new opportunities for career development. SLB can be an important resource for all of these, and we continue to develop exciting and innovative events and activities. While recent years have been challenging for all of us in many ways professionally and personally, one thing I am certain of is that this community can be a touchstone for all of us.

As I slide into the role of President, together with the help of past-president Nick Lukas and president-elect Louis Justement, and our active council, stay tuned for updates on this year's activities. The website is a great source of current information about the society, as is this newsletter. I have been engaged with SLB since my days as a post-doc, and I know that it is an important resource for collaborations, career development, training, and, just as importantly, professional camaraderie.

It has been remarkable to witness how many of our immunology terms have found their ways into the common vernacular as the pandemic has brought knowledge of immunology and advances in immunology to the forefront. The impact of our chosen field of study been unusually clear to the public recently, and while we do not, of course, all study SARS-CoV-2, the foundations of the functioning of the immune system, mechanisms of inflammation and host-microbe interactions, and disease therapies targeting immune functions seem all that more relevant to the world. I am proud to be part of this community.

The last two annual meetings have been virtual events. I was impressed at how active our membership was at these meetings, the creative ways in which organizers experimented to opened up pathways for engagement, and the coincident growth in society membership. But I'm sure I speak for many of us when I say that I am heartily looking forward to the 2022 in person meeting to be held in October on the Big Island of Hawaii! Our international organizers, Domenico Mavilio from the University of Milan and Chen Dong from Tsinghua University, have prepared a diverse and exciting program, numerous engaging activities are planned. We will keep a watchful eye on the status of the pandemic and the health and safety regulations as they change for the U.S. broadly and Hawaii specifically, and we will be prepared to adapt our plans if necessary. But I find that it is important to optimistically plan for the future! I am personally looking forward to the opportunity to get out and meet a bunch of new colleagues – and maybe share some 100% Kona coffee! Check out the program on the SLB website and register to join us! The SLB Awards Committee has been working to revise the menu of awards and opportunities for recognition being offered coincident with the annual meeting, so be sure also to check out the awards opportunities and apply.

As always, a special thanks to Jen Holland, our tireless Executive Director, who makes SLB run! She is a great contact for you to learn how you can participate! jholland@leukocytebiology.org

## SLB Joins IUIS!

SLB is pleased to announce the organization has officially joined IUIS as a member. We look forward to a productive partnership as we continue to serve the global research community.

## Grant Writing Webinar Series

Presented by Fiorini & Associates, SLB members are invited to register for this 3 part webinar series on Grant Writing.

Friday, May 6th- Funding Types and Sources for Leukocyte Biologists

Friday, May 13th - Proposal Development and Evaluation

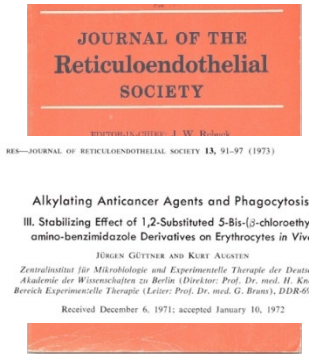
Friday, May 20th - Submission and Beyond

FIORINI & ASSOCIATES CONSULTANTS

Learn more and register

# RES History...Jump to 1972

*Join Communications Committee member Samson Kosemani as he looks back at great science hidden in the RES archives.*


JOURNAL OF THE
Reticuloendothelial
SOCIETY

RES—JOURNAL OF RETICULOENDOTHELIAL SOCIETY 13, 91-97 (1973)

Alkylating Anticancer Agents and Phagocytosis.
III. Stabilizing Effect of 1,2-Substituted 5-Bis-(β-chloroethyl)-amino-benzimidazole Derivatives on Erythrocytes *in Vivo*

JÜRGEN GÜTTNER AND KURT AUGSTEN

*Zentralinstitut für Mikrobiologie und Experimentelle Therapie der Deutschen Akademie der Wissenschaften zu Berlin (Direktor: Prof. Dr. med. H. Knöll), Bereich Experimentelle Therapie (Leiter: Prof. Dr. med. G. Brunn), DDR-69 Jena*

Received December 6, 1971; accepted January 10, 1972

It has been previously reported that phagocytic activity of the reticuloendothelial system (RES) in mice is reduced by the application of 1,2-substituted 5-bis (β-chloroethyl) -amino-benzimidazole derivatives and a direct alteration of the cell membrane of macrophages has been assumed to be responsible for the depression of carbon clearance from the bloodstream by those chemicals.

In earlier research carried out by Güntter and Augsten (1971) two of the phagocytosis depressing derivatives, ɣ-[1-methyl-5-bis-(p-chloroethyl)-amino-benzimidazolyl-(2)]-butyric acid hydrochloride and Q-[1- phenyl-5-bis- (β-chloroethyl) -amino-benzimidazolyl- (2) ]-DL-alanine were reported to decrease and delay osmotic hemolysis after in vivo administration. However, Güntter and Augsten in 1972 published a research work where they discovered that inhibition of the phagocytic activity of the RES by administration of benzimidazole-mustard derivatives (13 in 15) correlates with an increase of osmotic erythrocyte resistance. Their discovery that 1,2-substituted 5-bis-(β-chloroethyl)-amino-benzimidazole derivatives are the first chemically related group that involves an in vivo alteration of cell membranes of erythrocytes and macrophages in mice was the first to be reported. Güntter and Augsten concluded that the model of osmotic hemolysis could be suitable to prove the effectiveness of biologically active compounds on the RES activity.

One benefit of SLB membership is access to a vast archive of media. To access RES and more, go to the on-demand library. Select the RES ARCHIVE or any of the great courses listed. Login using your member credentials.

# The changing academic research landscape in the aftermath of the COVID-19 pandemic: a perspective

By Caitlin M. Gillis and George S. Karagiannis

For the last couple of years, we have lived and worked under the shadow of long, tiring, and repetitive quarantines in the context of global health responses to the SARS-CoV-2 outbreak. In late 2020, we examined the viewpoints of researchers: although it was evident that the pandemic generated frustrations and anxieties relating to project and career progression, the take-home messages from our interviewees were all but pessimistic in nature. Researchers from different backgrounds and career stages could envision opportunities for establishing more fruitful collaborations in the future, for eliciting a more considerate and caring mentality in research, and for cultivating passion and enjoyment of life inside and outside of academic research [see the Fall 2021 issue]. Now, as we approach the 2-year anniversary of "the pandemic", we asked some of our SLB members to reflect. Although the cloud of the pandemic is not yet dissipated, significant advances in vaccination and therapeutic research and development, along with improvements in the daily operations of our academic institutes, have allowed us to see the blue sky once again.

There is a consensus that, as a community, we have acquired tips and tricks to improve our research workplaces, emerging from the pandemic experience. Online meetings and improved on-site efficiency were cited as some of the positive outcomes. Dr. Cynthia Anne Leifer, Professor of Immunology (Department of Microbiology & Immunology, Cornell University), and a leading member of SLB, is particularly optimistic: "I think we have become more mindful of life challenges and how they affect our trainees. There are many more offerings to build wellness and mental health skills that are improving general wellbeing". Moving forward, our early career researchers saw numerous benefits. The teamwork that was necessary to negotiate the workplace arrangements during the peak(s) of COVID-19 has persisted: "people take care of each other's experiments as well...when I had to stay in quarantine a few weeks ago I was glad I could [relatively] easily give the most important tasks to colleagues" said Giulia Doglio, a PhD student at VIB/Ghent University, in Belgium.

Given the different set of priorities in the context of COVID-19, both as humanity and as an academic community, one could wonder whether our collective experiences have fundamentally changed the research landscape. From the perspective of Dr. Leifer "I don't think there has ever been the study of one disease from so many different immunological angles. This has brought richness to our understanding of immunology and epidemiology. Moreover, the amount of patient data has allowed unprecedented knowledge of first-time immune response to infection with and without vaccines". Some of our members in transition and training had the impression of disproportional funding opportunities: many projects on COVID have been newly founded or get more attention nowadays, "leaving other areas of science with less resources". Have the funding priorities changed so significantly that certain areas have turned *scientifically cold*, while others *scientifically hot*? And what would that mean for an early-career investigator in 2022? Dr. Leifer offers some advice: "Stay in your lane. New, exciting things will always come up, maybe not so significantly as COVID-19, but if you continuously pivot your research to the latest hot topic, it often does not work out. However, if you use the latest hot topic to enrich your own scientific questions, it can really drive your research forward".

One of the largest take-home messages is value of communication: both within our scientific community and to the general population. While electronic platforms have improved our communication capacities, and we have developed flexible forms of communication and even international engagement, if we can continue to use and apply these new tools and ways of working among researchers, it will be for the better. Engaged and cross disciplinary approaches were what enabled us to better manage the public health responses and improve outcomes for the population, in terms of testing and vaccines. Moreover, as scientists became famous figures and newspapers cited epidemiologists daily, we have all had the experience of talking to a friend or a family member about the nuances of viral responses and the importance of vaccination. Never has public outreach and active communication of scientific principles been so important.

# Behind the Science:
## Interviews with Early Career JLB Authors

by Alan Hsu

*Pictured: Micah Willis with PI Robert Maile*

### Plasma extracellular vesicles released after severe burn injury modulate macrophage phenotype and function

Micah L. Willis, Cressida Mahung, Shannon M. Wallet, Alexandra Barnett, Bruce A. Cairns, Leon G. Coleman, Robert Maile

Contact Micah to learn about his work...

Read the full article in JLB...

**Q:** Where did your journey in science begin (what inspired you to pursue a career in science)?

**A:** My journey in science began my senior year in college at North Carolina Central University, a Historically Black College and University in Durham, NC. I decided that I wanted to make a difference both in human health and in the African American community and hoped coming to UNC would begin my journey. I wanted to provide a bridge to help increase the percentage of African Americans in the STEM field, including students holding PhDs.

**Q:** How did you choose your current research topic and interest?

**A:** I choose my current research topic based on my using my strengths and my research background; I wanted a research topic that had translatable human health aspects. My PI was able to find me a project, and that fit my strengths, but would challenge me and help me grow as a scientist. It was also a project that previous students had worked on in the lab, with some of the next steps already defined. It also featured new cutting-edge techniques. It was easy to come into the lab, gain the background information and techniques to swiftly move the project forward.

**Q:** Could you use a few lay sentences to describe/summarize your findings in this paper?

**A:** In this paper we were looking at the role of extracellular vesicles to key immune cell types. These vesicles serve as a form of communication between cells and can make cells respond. We know that within burn injury, there is dysfunction within the immune system, therefore we hypothesize that these vesicles may be contributing to this dysfunction. We found a few key things: when we transferred these vesicles into healthy mice, they resemble a human's burn response. We also found that when we placed these vesicles on macrophages (another immune cell), they have differential responses depending on the time of injury.

**Q:** What was the most exciting or memorable moment(s) during the process of this research?

**A:** The most exciting moment was spending time with my PI as we conducted some of these experiments. We conducted these around Christmas time, so everyone was in good spirits.

**Q:** What was the biggest hurdle or challenge associated with this story?

**A:** One of the biggest hurdles was culturing the bone marrow derived macrophages. It takes about 9 days until you can use them, and they can mature, and the first time I had contaminated them and had to start over.

**Q:** Besides your PI is there anyone that significantly helped you in your path to become a scientist?

**A:** One of my instructors at NCCU was significantly helpful in my path to becoming a scientist. She encouraged me in my senior year that I should apply to graduate school. If it wasn't for her, I may not have even considered graduate school. She ensured me that I will be successful in graduate school, and that I can become a PI and run my own lab and conduct my own research.

**Q:** What's next for you?

**A:** Currently, I am in my third year of my PhD program. This year I'm conducting a few experiments, having my first committee meeting and attending conferences to present my research.

**Q:** What would your advice be for junior or incoming Ph.D. Students who want to pursue a career in science and perhaps your field?

**A:** My biggest piece of advice is to not be afraid to venture out and try new things. Graduate school is not only about being a scientist conducting research but it' also a place to grow professionally and expand your network. Venturing out to try new things can expand your network in ways you may not foresee.

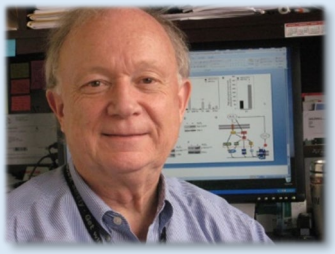
**Q:** Tell us something interesting outside of being a scientist about yourself

**A:** Outside of being a scientist I love to play video games with my friends. It's a great stress reliever and helps me wind down after a long day. Many of my lab mates are also into video games so we all can chat about it in the lab.

## NEW SLB AWARDS PROGRAM

With more opportunities for all education and career levels, discover this updated program and apply for 2022! The Presidential Scholars Program offers merit based opportunities for **Postdocs**, **Graduate Students**, and **Undergraduate Students**. The Excellence in Leukocyte Biology Awards offers recognition to **Early and Mid-Career Scientists**. Other awards like Diversity, Equity, and Inclusion and Developing Nation Travel Awards, along with the Mentoring Award provide other opportunities. SLB has also added a new need based Travel Grant Program.

# Fireside Chat with the 2022 Legacy Awardee, Robert Clark



*Dr. Robert A. Clark is the Associate Vice President for Translational Science and Professor in the Department of Medicine at the University of Texas Health Science Center at San Antonio. We were delighted to learn more about his career in science, interests and advice for the next generation of scientists.*

*An Interview with Albert Sek*

**Q: Can you tell us a bit more about your current research program?**

**A:** The focus of my current research is on Parkinson's disease, which may sound implausible for an infectious disease guy working for most of his career on the host response to infection. I'll try to make some sense of it. My early work on neutrophil chemotaxis was followed by an extended period of research on the phagocyte NADPH oxidase, now designated NOX2. We assessed the kinetics of superoxide anion, hydrogen peroxide, and hypochlorous acid formation and put a good deal of effort into understanding the effects of these oxidants on various biochemical and cellular targets. Next came analyses of the oxidase itself – its multi-component nature, the subcellular localization of membrane-bound vs. soluble factors, the stimulus-induced subcellular assembly of the active enzyme, and ultimately the cloning of the genes for the several individual components and defining the genetic basis of the various forms of chronic granulomatous disease. This exciting phase of my career took place at the University of Iowa in close collaboration with my dear friend, colleague, and prominent SLB leader, Bill Nauseef.

The NADPH oxidase field was transformed through the human genome project, which facilitated the discovery that NOX2 was not unique, but rather the founding member of a 7-gene family of NOX and DUOX enzymes. The revelation that many tissues express oxidant-generating members of the NOX family of genes led us to broaden our approach to one of inflammation and oxidative stress generally, and more specifically as a key aspect of the biology of aging. At this time, along came a postdoc (Syed Imam) with a strong neuroscience background, and a few years later another postdoc (Biju Chandu) joined with similar interests. Both of these talented researchers took our inflammation theme into the central nervous system, focusing on neuroinflammatory disorders, a prominent example being Parkinson's disease. Moreover, a former postdoc (Senlin Li), running his own independent lab, headed in a synergistic direction and our two labs began collaborations that have continued to the present time. Two main areas of study have emerged – one on basic mechanisms of inflammation-induced dopaminergic neuronal injury and the other on hematopoietic stem cell-based delivery of therapeutic genes to areas of neurodegeneration. The latter area is the topic that I will address in my Legacy Award lecture.

**Q: How did your background influence your decision to pursue a career in academic and clinical research?**

**A:** I come from a large family that places a high value on education. I was hooked on science from as early as I can remember, but I took a significant turn at Syracuse University by going into biology, moving with some uncertainty from my initial plans for a career in physics and mathematics. Happily, the structured approaches of mathematics have always stayed with me. I began medical school at Columbia University with some background research experience, but I was undecided about a career track. Publishing my first paper, based on a summer lab experience at Guy's Hospital, London, felt very good. However, the pivotal factor was the opportunity to spend a remarkably productive three-year fellowship at the National Institutes of Health (NIH) in Bethesda, working with Harry Kimball and embedded in an incredible milieu of scientific talent, including a number of Nobel Laureates, as well as several future Nobelists among my training cohort.

My further training and early faculty experience at the University of Washington (UW), under the unique mentorship of a great scientist, inspiring role model, and wonderful friend, the late Seymour Klebanoff, served to consolidate my skills and fuel my motivation for a career as an academic biomedical investigator. Both my NIH and UW training experiences were focused on neutrophil cell biology and biochemistry, as well as clinical disorders of leukocyte function. Those early forays into phagocytes, host responses, and inflammation became the foundation for my work over many years, notwithstanding occasional tangential adventures. One of the more productive departures arose from my 1990 sabbatical at the University of Geneva working with Daniel Lew, Werner Schlegel, and Karl-Heinz Krause. I went there with the intention of learning, hands-on at-the-bench, the nuts and bolts of molecular biology. The scientific problem we tackled with these methods was the role of the ER calcium-binding protein calreticulin in neutrophil $Ca^{2+}$ signaling. I made cDNA libraries, did expression cloning, sequenced the clones (using hand-poured slab gels), and expressed the recombinant proteins in bacterial and insect cell systems.

Another example of an exciting new direction has been my collaboration with Sunil Ahuja, my close friend and colleague at UT Health San Antonio. From him I have learned a great deal as a participant in his studies on the immunopathogenesis of HIV/AIDS, allergic airways disease, and, most recently, COVID-19.

**Q: Can you tell us more about your involvement with the Society for Leukocyte Biology, including your role as President (2016-17)?**

**A:** My participation in SLB tracks back to the time of its predecessor organization, The Reticuloendothelial Society. In addition to my regular participation in the annual scientific meetings, I served as a Section Editor of JLB from 1985 to 1993 under Editor Carl Stewart, and then as an Editorial Board member. I was elected to the SLB Council in 2004 and following that I headed up fund-raising efforts for the Meetings Committee from 2008 to 2011. I served a cycle as SLB President Elect, President, and Past President from 2014 to 2019, and then went on to my current roles as a Nominating Committee member and SLB representative to the FASEB Science Policy Committee.

These experiences in various roles within the Society have all been interesting and rewarding. I have learned and benefitted greatly from the expertise and collegiality of the community, as well as the work of our talented and dedicated staff. I must say that of the numerous national organizations that I've been a part of throughout my career, my SLB participation has been the most meaningful and enduring.

**Q: What does it mean to you to be awarded the Legacy Award?**

**A:** I am deeply grateful to the SLB leadership for selecting me and truly in awe of the many outstanding leukocyte researchers who are prior recipients of this award. There are many wonderful colleagues among them, but I'll mention just a few who have played significant roles in my career – Seymour Klebanoff, Ralph Snyderman, John Gallin, Bill Nauseef, Marco Cassatella, Mary Dinauer, and Cash McCall.

Legacy Awardee Fireside Chat continued….

**Q: In your career, what has been most surprising, most challenging, and most enjoyable?**

**A:** Perhaps most surprising, in a good way, have been the incredibly powerful experimental, analytical, and data science tools that have become progressively more available to both individual researchers and collaborative interdisciplinary teams. Also surprising, but in an unfortunate way, have been the disruptive clashes between science and politics, most recently in the context of the COVID-19 pandemic.

Regarding challenges, I have to say that one of the biggest ones for all of us is to sustain grant funding for our research. Moreover, this has become progressively more of a drain on time and energy over the course of my career as the proportion of submitted grants that receives funding has dwindled. I can still recall those heady days of 30%+ cutoffs at the NIH, and even higher at the VA. But I still believe that hard work and dedication to the task will ultimately be rewarded. Another type of funding challenge that I've faced is in the development and commercialization of novel therapeutics, which comprises a very different world of strategies and tactics.

Most enjoyable for sure has been the opportunity to mentor scientists in training, as well as junior faculty colleagues. Helping to move their careers along and taking pride in their accomplishments and successes have been extraordinarily rewarding for me.

**Q: What advice would you give to those who are starting their careers in academia (i.e., post-docs, early-stage faculty, physician-scientists)?**

**A:** Success as an academic scientist requires dedication, hard work, and a certain amount of good luck (but recall that "chance favors the prepared mind' [Louis Pasteur]). Aspiring young researchers can optimize their potential through high quality training with a mentor who is fully committed to their career development and evolving independence. Find a mentor who will not only provide a productive training experience, but who will continue their support well beyond that time frame. I also believe that extending one's training for a time in a protected milieu, vs. rushing into the responsibilities of an independent position, is often a worthwhile investment in one's future success. For physician-scientists, I advise seeking opportunities that protect a large share of your time (80% would be nice) for research – otherwise, the deck is stacked against you as service responsibilities compete for your attention. Finally, be adventurous in your science, take occasional risks, and capitalize on those serendipitous findings that come along – it won't always pay off, but over time this approach can lead to novel insights and unanticipated opportunities.

**Q: What are some hobbies that you enjoy outside of the office?**

**A:** I am an avid reader, both fiction and non-fiction. Combining the latter with my love of science, my recent favorites are Walter Isaacson's "*The Code Breaker*" (the story of Nobel Laureate Jennifer Doudna's work on CRISPR), as well as his "*Leonardo da Vinci*," the comprehensive biography of one of the most extraordinary intellects of all time. Recent favorites in the fiction genre are "*A Gentleman in Moscow*" (Amor Towles), "*While Justice Sleeps*" (Stacey Abrams), and "*The Cellist*," an exciting spy story by Daniel Silva. I am also fully absorbed in the world of wine. I read about wine, travel to places where good wine is produced, visit the wineries, meet the vintners, taste wine with good friends and fine food, and add as many bottles to my collection as my cellar will accommodate. My favorites come from Tuscany, Piemonte, Spain, Argentina, Napa/Sonoma, and the Pacific Northwest. I love to travel and often include these wine regions in my itinerary. I also enjoy outdoor sports, especially downhill skiing and wilderness canoeing. One of my favorite places is Minnesota's Boundary Waters Canoe Area, which features amazing wildlife and natural beauty, but no cell phone signals and very few people.

**Q: Any other acknowledgements or comments?**

**A:** I would close by saying how grateful I am to my wonderful colleagues, mentors, mentees, and laboratory staff for their many valuable contributions to my work and to the enjoyment of my career in academic medicine. Lastly, I'll briefly relate the most amazing way in which I recently celebrated a major birthday (no numbers please) – a virtual surprise party wherein more than 70 of these good folks gathered to tell me, in very kind and generous terms, how I had been a positive influence on their careers. What a meaningful reward that was, just for doing what I love to do.

# FASEB CORNER

*SLB joined FASEB – the nation's largest coalition of biomedical researchers, representing 30 scientific societies – in 2019. FASEB corner is a regular feature providing updates on recent initiatives that demonstrate the Federation's dedication to its member societies.*

FASEB is now accepting applications for early career board positions! **Apply now through April 11th.** Learn more

Advocating for Increased Medical Research Funding – FASEB issued an action alert asking the biomedical research community to contact Congress to urge them to complete the fiscal year 2022 budget for the NIH and other agencies. Advocates from 36 states sent more than 700 emails to members of Congress noting that funding delays are devastating to research progress. SLB members can keep up with activity on Capitol Hill via FASEB's Washington Update newsletter (also linked on SLB's website).

Offering Resources for Graduate Students – FASEB hosted "Dealing with Conflict as a Graduate Student," a webinar that discussed conflict resolution skills. Speakers presented strategies to mediate and prevent conflicts with fellow graduate students and faculty mentors, as well as how to identify institutional conflict mediation resources available to trainees. Presenter slides and an archived recording of the webinar are available.

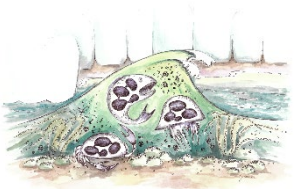
Preparing for NIH's Data Management and Sharing Policy – Data management plans (DMPs) will soon be required for all NIH-funded research. FASEB hosted several programs as part of its DataWorks! initiative to help the research community prepare for the new policy:

- FASEB partnered with Openscapes to host "Team Spirit: Help Your Research Team Find Data Nirvana." Participants explored solutions to working collaboratively in teams. "What Should Be in My DMP?" offered participants the opportunity to engage with NIH-funded researchers and explore the types of data they generate. The "DataWorks! DMP Challenge" salon reviewed the basic components of a DMP, highlighted DMPTool as a free resource for developing DMPs, and introduced the DataWorks! DMP Challenge to reward exemplary DMPs in the biological and biomedical sciences.
- FASEB also launched the DataWorks! Openscapes Champions program, a cohort-based professional development opportunity for research teams. This two-month virtual program is designed to help teams establish shared, reproducible practices for data management and analysis.
- FASEB and the University of California Curation Center's DMPTool launched the DataWorks! DMP Challenge. The competition spotlights DMPs that incorporate image data types, human subjects data, and big data into a template based on NIH requirements. Ten Outstanding NIH data management and sharing awards, each of which includes a $500 prize, will be announced later this year.

Supporting Diversity in the Scientific Workforce – To further its commitment to diversity, equity, accessibility, and inclusion, FASEB Publications signed onto the Joint Commitment for Action on Inclusion and Diversity in Publishing. FASEB and the other signers collectively promise to better understand the research community; strive for more inclusive representation of authors, reviewers, and editorial decision-makers; and improve outcomes for inclusivity and diversity, at all stages of the publishing process. In addition, FASEB highlighted diversity in the biological and biomedical sciences through social media posts and news articles bringing awareness to scientists of Native American, Hispanic, Latino, Asian American, and Pacific Islander heritages.

# SLB's Fourth Annual Image Contest

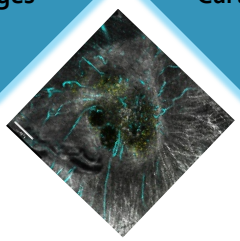
April 29th is the International Day of Immunology! SLB welcomes members to participate in a little fun. Submit an original, self-made, unpublished image in any of these categories and be entered into a prize drawing. Formats accepted include jpegs, gifs, pngs, and pdfs. Entries are being accepted **now through 5pm eastern Monday, April 18th**. Winners to be announced on April 29th in celebration of the International Day of Immunology. Learn more and submit today!



*2021 Winner: Ekaterina Pylaeva*

By submitting your image and caption, you give SLB permission to include the images (with credit) in the next issue of iSLB and on the society website.

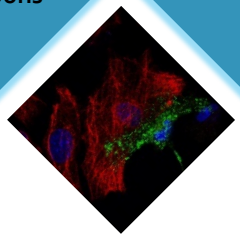
**Microscopic Images**



Rachel Kratofil

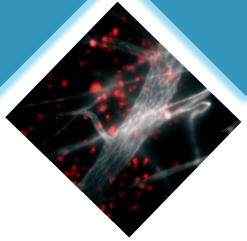
**Science Humor Cartoons**

**Graphical Abstracts**



Joel Schilling

**Scientific Art**



Ronen Sumagin

# JLB Top 10 Downloads (Oct-Dec 2021)

A new feature the Publication Committee would like to provide to members is a quarterly report of the Top 10 Downloads from JLB. Here we present the top 10 downloads from October, November, and December 2021. Access these articles and more with your member subscription to JLB!

| | |
|---|---|
| Interferon-γ: an overview of signals, mechanisms and functions, http://dx.doi.org/10.1189/jlb.0603252 | Kate Schroder, Paul J. Hertzog, Timothy Ravasi, David A. Hume |
| M2b macrophage polarization and its roles in diseases, http://dx.doi.org/10.1002/JLB.3RU1018-378RR | Le-xun Wang, Sheng-xi Zhang, Hui-juan Wu, Xiang-lu Rong, Jiao Guo |
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## *Meet Councilor Gustavo Menezes,* Federal University of Minas Gerais - Brazil

I am interested in how leukocytes migrate to sites of cell death and how sterile inflammation damages tissues. During my Masters and PhD, I investigated mechanisms involved in leukocyte chemotaxis and started to work on visualization of leukocyte trafficking in vivo, which has been instrumental in the setting up in vivo imaging techniques at our university. After my PhD, I joined Paul Kube's group at the University of Calgary as a post-doctoral fellow. Here, I received training on using confocal microscopy to visualize specific immune cells in vivo. My main post-doc project was to understand how immune cells recognized dead cells in vivo. I generated a novel model of in vivo leukocyte migration and demonstrated seminal steps of neutrophil migration and how dead cells show the immune system where they are. These data were published in *Science* and is considered a landmark paper with more than 1000 citations. I also established the first two-photon confocal microscope in Latin America to perform *in vivo* imaging. This technique is used widely at the University, which has become a reference centre for in vivo confocal microscopy in Brazil. In 2010, I became an associate professor at the Department of Morphology and started my own lab. As a principal investigator, I work to understand how immune cells exacerbate organ injury during acute liver failure with data published in *Gastroenterology*, *Journal of Hepatology*, *Cell Reports*, *Hepatology* and *Nature Protocols*. I continue to research how we can manipulate the immune system to avoid collateral damage during sterile diseases and the basic biology behind how immune cells deal with dead cells in our body. Using experimental models, I has elucidated novel therapeutic alternatives to treating acute liver failure, and in 2014 I patented a new class of drugs that block the immune recognition of molecules derived from dead cells that can feed the inflammatory response, worsening liver injury. These new drugs were shown to prevent up to 75% of liver damage, and will be key in the future of this field. In 2016, my lab was honoured as a "Nikon Center of Excellence". My group described a new cell lineage in the liver, and published the mechanisms involved in macrophage education in the liver and how new liver macrophages and dendritic cells become functional phagocytes after chemical cell ablation in liver. In 2018, I published a landmark manuscript in *Journal of Hepatology* describing the differences in the immune and metabolic systems in new-borns compared to adults. I have supervised 23 under-grad students, 12 Masters, 8 Ph.Ds and 9 post-docs. I am proud to say that all of my former post-docs are now Professors or Investigator. Now, as a Chan Zuckerberg Initiative Grantee, we will launch the largest program of democratizing bioimaging across Brazil. My childhood dream to become a scientist is now not only true, but also very exciting.

# Immune Podcast: Origin Story

## An Interview with Immune Podcast Co-Founder, Cynthia Leifer

By Stephanie Silva-Del Toro

**Q:** Did you ever imagine, as a graduate student, you were going to become one of the voices of the immune system on Apple and Spotify?

**A:** Well, not Apple and Spotify because they did not exist yet… I just dated myself, ha! It is funny that you ask that question because I was selected as the commencement speaker of my PhD graduation and the theme of my talk was about everyone becoming science communicators. We have a responsibility when we have this knowledge, to break it down and share it. Even at that time, I was already starting to think about Science communication and how important it was that we become ambassadors of the knowledge that we have. I have tried to communicate Science in a way people can understand it and we did not have the pandemic then, but we had autoimmune diseases. We had infectious disease and we had many, many, many people still who did not understand how all of it works, how their own body works.

**Q:** How did you start podcasting?

**A:** That is a funny story. Vincent Racaniello, came here to give a talk and I knew of his podcast TWIV (This Week in Virology). When he gives his science talks, he gives a 40 minute seminar about his Polio research and he reserves 10 to 15 minutes to talk about science communication. He is even more passionate than me about this! When I talked to him during his visit I told him I was a fan of TWIV and that I was thinking of doing an Immunology podcast one day and he said, "Funny you ask, because I'm looking for someone to do it with me. Would you like to do it?" And I was like, what? There is no way I have time for that; but the seed was planted. I contacted him later and told him I was interested in doing it. I did not think we could do it every week, but we could do it once a month; like he did for This Week in Microbiology (TWIM). He said: "I got a third person. We're good!". So, it was Vincent (Dr. Racaniello), Stephanie (Dr. Langel), and me that started Immune as part of the Microbe.tv podcasts. Then we added Brianne (Dr. Barker) once the pandemic hit because she, like Steph, is an Immunologist and virologist.

**Q:** How do you pick the articles that are going to be discussed?

**A:** You will notice that my papers are a lot of innate Immunology; things that interest me. Twitter is an underappreciated source for sharing important articles. I certainly share SLB things there too. There are some really nice ways that people are summarizing papers on Twitter now. Twitter also helps me find some of the articles that are gaining traction and that a lot of people are interested in. That's some of the ways, but I am also on the lookout for when things come out in major journals or if there's something that catches my eye. It does not always have to be the latest, most important, cool science; it can still be solid, really interesting papers. We do fewer than 12 papers a year because we also interview people and sometimes we just talk about a topic. For the papers we do pick, we choose ones where and important Immunology topic is covered. This way, we can provide context around that topic to educate the audience about Immunology in general. It is not all about the paper per-se, it is about what that paper talks about. Sometimes we do not actually talk about the paper that much but other times we will really go throughout the paper in detail. So, it just depends on the topic.

**Q:** Any advice to postdocs, grad students, or undergrads who are interested in scientific communication?

**A:** Where to start? Start writing blogs or making your own content, some people are making their own YouTube channels. For Immune and other podcasts in the Microbe.tv family, Vincent is very professional and makes sure they are polished. We use HD cameras and pro microphones to make it high quality. If you don't have access to quality AV equipment, it is going to be hard because it's not going to sound great. Listeners are not going be excited by it, but might be distracted by it. So I do not necessarily suggest everybody dives in to try and do something big. I think just talking whenever you can and honing your message is important because you might say something one way and it doesn't get received the way you think it does.

You have to keep trying. It is just like writing and everything else you do in Science, you just keep experimenting, exploring, and trying. There are lots of opportunities for science communication. I know students here at Cornell have created groups where they will go into the community, put up a table, and answer questions about vaccines and things like that; just to help get accurate information out there. People also write opinion articles. I have done a lot of that. I do not know if that is the right place for people to start because getting into controversial topics might not be what you want to do when you are earlier in your career. It is a little easier when you are established, but there are a lot of things you can do just to communicate information that isn't necessarily controversial.

*Stephanie Silva-Del Toro*

I think that is why you have gained such a big audience. I feel this podcast is for everyone, not only for immunologists. It's like a bunch of friends geeking out about a really cool paper. That is what I love about Microbe.tv. If you have no background in Immunology, you can still learn from it and understand what is being said.

I tell people who are not in science, listen to the first 20 minutes or so. We usually give the background information that you need to know in order to understand the paper.

*Cynthia Leifer*

### *Immune Podcast Origins continued…*

**Q:** What advice do you have to make science more accessible to people without a science background?

**A:** The key thing is to tell stories and use analogies. The further down the road we get in our scientific careers, the less "in touch" we are with the level of knowledge that the average person has. For example: when you talk about cells, it is obvious what a cell is; but people may ask "what is a cell?" You think "How am I supposed to explain how the immune system works if I cannot talk about a cell?". Sometimes you are caught off guard with something intuitive to a scientist; there is a lot of information people do not have. You then start to understand why there is distrust, why there is confusion; because there is a lack of knowledge that people have and this makes it very hard to communicate across that divide.

When a kid asks a question, you must figure out what the kid is asking you exactly. Sometimes you think they are asking you one thing but they are really asking something else. You might answer the question you *heard* but not the question they *asked*. They might think "Well, that was not what I was asking and now I'm totally confused!" Trying to get clarity on what people want information about is important, asking them what they want to know for example "What will help reduce your fears? What will help you understand this better?" Then give them that information in small bits; people are more willing to learn when they are curious as opposed to being talked at. I try to understand what they want to know and then break it down in the simplest of terms as I can. I use analogies and stories where I can explain how things work in a general sense.

*I would personally like to thank Vincent for getting me involved in this and providing so much support. I believe this is such an important thing for Science in general that I am willing to go and do these things that I do not necessarily get rewarded for. The danger of not engaging at all in Science communication is that the message is then controlled by people who really do not know what they are talking about.*

*Should everybody do it? Not necessarily because there are some people that just cannot communicate very well with the public. If you're interested in it, try and try again, because it is so important. If scientists are not giving the message about science, who is? We need to get to the discussion, but it can be messy. If you are going to get into controversial issues, like I do a lot of vaccine advocacy, which is clearly, difficult. It should not be controversial, but it is.*

*From an op-ed project I participated at:* ***"If you say things of consequence, there will be consequences, but the alternative is to be inconsequential."*** *The idea is that we need to speak up because we have the credentials to do it. If we do engage, we must be willing to take a couple of blows because there is going to be pushback. The danger of not engaging in Science communication is that someone else is controlling the message and we know how important the messenger is to deliver an accurate message.*


Dr. Cynthia Leifer is a Cornell University Immunology Professor, a member of the SLB Council, science communicator, and the co-founder of the Immune podcast. Follow microbe.tv for many fascinating podcasts by scientists.

Look for coming details about the Professional Development and Communications Committees workshop this fall at SLB 2022 titled *Communicating Science "Outside the Box": Beyond Peer-Review* which will include Cynthia Leifer and others.

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Presented by David Underhill, SLB President, and Program Chair, Domenico Mavilio